



```

ring nodes :
1  2  3  4  5  6  7  8  9  10  11  12  13  14  15  16  17  18  19  20  21  22  23
ring bonds :
1-2  1-3  1-4  1-5  1-6  1-7  2-3  4-6  5-7  8-9  8-13  9-10  10-11  10-14  11-12
11-17  12-13  14-15  15-16  16-17  18-19  18-23  19-20  20-21  21-22  22-23
exact/norm bonds :
1-2  1-3  1-4  1-5  1-6  1-7  2-3  4-6  5-7  8-9  8-13  9-10  10-11  10-14  11-12
11-17  12-13  14-15  15-16  16-17
normalized bonds :
18-19  18-23  19-20  20-21  21-22  22-23

```

G1:[\*1-\*2],[\*3-\*4]

Match level :

1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:Atom 7:Atom 8:Atom 9:Atom 10:Atom  
 11:Atom 12:Atom 13:Atom 14:Atom 15:Atom 16:Atom 17:Atom 18:Atom 19:Atom  
 20:Atom 21:Atom 22:Atom 23:Atom

L1 STRUCTURE UPLOADED

=> d his

(FILE 'HOME' ENTERED AT 16:47:40 ON 23 JUN 2008)

FILE 'REGISTRY' ENTERED AT 16:48:02 ON 23 JUN 2008

L1 STRUCTURE UPLOADED

=> d ll

L1 HAS NO ANSWERS  
L1 STR

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

Structure attributes must be viewed using STN Express query preparation.

=> s l1  
SAMPLE SEARCH INITIATED 16:48:39 FILE 'REGISTRY'  
SAMPLE SCREEN SEARCH COMPLETED - 674 TO ITERATE

100.0% PROCESSED 674 ITERATIONS 9 ANSWERS  
SEARCH TIME: 00.00.01

FULL FILE PROJECTIONS: ONLINE \*\*COMPLETE\*\*  
BATCH \*\*COMPLETE\*\*  
PROJECTED ITERATIONS: 11923 TO 15037  
PROJECTED ANSWERS: 9 TO 360

L2 9 SEA SSS SAM L1

=> s l1 full  
FULL SEARCH INITIATED 16:48:45 FILE 'REGISTRY'  
FULL SCREEN SEARCH COMPLETED - 13767 TO ITERATE

100.0% PROCESSED 13767 ITERATIONS 123 ANSWERS  
SEARCH TIME: 00.00.01

L3 123 SEA SSS FUL L1

=> fil caplus  
COST IN U.S. DOLLARS SINCE FILE TOTAL  
ENTRY SESSION  
FULL ESTIMATED COST 178.36 178.57

FILE 'CAPLUS' ENTERED AT 16:48:53 ON 23 JUN 2008  
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FILE LAST UPDATED: 22 Jun 2008 (20080622/ED)

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<http://www.cas.org/legal/infopolicy.html>

=> s l3/rep  
1197 L3

L4 4592047 PREP/RL  
102 L3/PREP  
(L3 (L) PREP/RL)

=> s 14 and py<=2003  
23982101 PY<=2003  
L5 32 L4 AND PY<=2003

=> d 1-32 bib abs

L5 ANSWER 1 OF 32 CAPLUS COPYRIGHT 2008 ACS on STN  
AN 2003:951123 CAPLUS  
DN 140:16816  
TI Method for producing highly pure tris-ortho metalated organoiridium  
compounds  
IN Stoessel, Philipp; Bach, Ingrid; Spreitzer, Hubert; Becker, Heinrich  
PA Covion Organic Semiconductors G.m.b.H., Germany  
SO PCT Int. Appl., 30 pp.  
CODEN: PIXXD2  
DT Patent  
LA German  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2003099959	A1	20031204	WO 2003-EP5281	20030520 <--
	W: CN, JP, KR, US				
	RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR				
	DE 10223337	A1	20031204	DE 2002-10223337	20020525 <--
	EP 1516033	A1	20050323	EP 2003-737966	20030520
	EP 1516033	B1	20070627		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, FI, RO, CY, TR, BG, CZ, EE, HU, SK				
	CN 1656195	A	20050817	CN 2003-811959	20030520
	JP 2005531590	T	20051020	JP 2004-508204	20030520
	US 20050131232	A1	20050616	US 2005-515104	20050126
	US 7179915	B2	20070220		
PRAI	DE 2002-10223337	A	20020525		
	WO 2003-EP5281	W	20030520		
OS	CASREACT 140:16816; MARPAT 140:16816				
GI					

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

AB Methods for producing highly pure tris-ortho metalated organoiridium compds. described by the general formulas I and II (A, A' = independently selected N or C-H; X, X' = independently selected -CH:CH-, -CR:CH-, -CR:CR-. N-H, N-R1, O, S, or Se; R, R' = independently selected F, Cl<br>Br, NO2, CN, (un)branched or cyclic C1-20 alkyl or alkoxy groups in which ≥1 nonadjacent CH2 groups may be replaced by -O-, -S-, -NR1-, or -CONR2- and in which ≥1 H may be replaced by F, C4-14 (hetero)aryl groups which may have ≥1 nonarom. substituents R, where R substituents on the same or different rings may combine to form a further mono- or polycyclic ring system; R1, R2 = independently selected H or C1-30 aliphatic or aromatic hydrocarbon residues; m = 0-4; and n = 0-2) are described which entail reacting compds. described by the general formulas IrY3.nH2O, III, and IV (Y = F, Cl, Br, OH, (un)branched or cyclic C1=0 alkoxy groups, or phenoxy groups) with compds. described by the general formulas V and VI and a Lewis acid. Compds. described by the general formulas I and II are

also claimed whose purity is >99.0% as determined by HPLC. Use of the compds. as chromophores in electronics is discussed (no data).

RE.CNT 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 2 OF 32 CAPLUS COPYRIGHT 2008 ACS ON STN  
AN 2003:874573 CAPLUS  
DN 139:371625  
TI Organic electroluminescent device and its production method  
IN Suzurizato, Yoshiyuki; Yamada, Taketoshi; Kita, Hiroshi  
PA Konica Minolta Holdings Inc., Japan  
SO Jpn. Kokai Tokkyo Koho, 32 pp.  
CODEN: JKXXAF

DT Patent  
LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2003317946	A	20031107	JP 2002-120841	20020423 <--
	JP 2008066759	A	20080321	JP 2007-305561	20071127
FRAI	JP 2002-120841	A3	20020423		

AB The invention relates to an organic electroluminescent device comprising organic layers sandwiched between an anode and a cathode, wherein, at least, one of the organic layers is formed by a wet process, such as ink-jet printing, spin coating, etc., using the solution containing the organic compound having the glass transition temperature in 80-250 °C and purified by a sublimation method. One of the organic layers prepared by the wet process may be an electroluminescent layer that comprises a host material and a phosphorescent guest material.

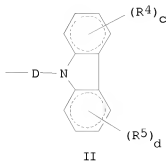
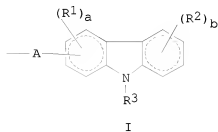
L5 ANSWER 3 OF 32 CAPLUS COPYRIGHT 2008 ACS ON STN  
AN 2003:818436 CAPLUS  
DN 139:323663  
TI Preparation of metal complexes containing carbazole derivatives for organic electroluminescent materials  
IN Kobayashi, Satoshi; Doi, Shuji; Mikami, Satoshi  
PA Sumitomo Chemical Company, Limited, Japan  
SO PCT Int. Appl., 96 pp.  
CODEN: PIXXD2

DT Patent  
LA Japanese

FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2003084973	A1	20031016	WO 2003-JP3494	20030324 <--
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
	RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
	TW 277617	B	20070401	TW 2003-92106272	20030321
AU	2003220974	A1	20031020	AU 2003-220974	20030324 <--
GB	2404380	A	20050202	GB 2004-23314	20030324
GB	2404380	B	20060823		
DE	10392453	T5	20050414	DE 2003-10392453	20030324

	JP 2004002344	A	20040108	JP 2003-84772	20030326
	JP 2004002755	A	20040108	JP 2003-84773	20030326
	US 20050147843	A1	20050707	US 2004-508861	20040924
PRAI	JP 2002-86173	A	20020326		
	JP 2002-86174	A	20020326		
	WO 2003-JP3494	W	20030324		
OS	MARPAT 139:323663				
GI					



AB This patent relates to the preparation of metal complexes having a metal complex structure permitting luminescence from the triplet excited state and a monovalent group represented by the general formula (I) [wherein A is arylene or the like; R1 and R2 are each independently halogeno or the like; R3 is alkyl or the like; a is an integer of 0 to 3; and b is an integer of 0 to 4] or (II) [wherein D is arylene or the like; R4 and R5 are each independently halogeno or the like; and c and d are each an integer of 0 to 4]; and luminescent devices made by using the same. The metal complexes are superior to luminescent materials of the prior art in luminous efficiency and can form luminescent layers by coating. Thus, an iridium complex polymer prepared from a composition comprising 9,9-dioctyl-2,7-dibromofluorene, bis(2-phenylpyridine) [2-(bromophenyl)pyridine]iridium(III), tris[2-(bromophenyl)pyridine]iridium(III), [2-(phenyl)pyridine]bis[2-(bromophenyl)pyridine]iridium(III), tris(2-phenylpyridine)iridium(III) (all three ligands in the Ir complexes are orthometalated), and a monomer made from the reaction of N-ethyl-3-carbazolecarboxaldehyde and a reaction product of 1,4-dibromo-2,5-bis(bromomethyl)benzene with tri-Et phosphite was dissolved in chloroform (0.2 weight%) and spin-coated to form a thin film which showed illumination intensity 1.97 at 450 nm, 1.78 at 476 nm, and 1.67 at 523 nm.

RE.CNT 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 4 OF 32 CAPLUS COPYRIGHT 2008 ACS on STN  
AN 2003:758915 CAPLUS  
DN 139:381596  
TI Homoleptic Cyclometalated Iridium Complexes with Highly Efficient Red Phosphorescence and Application to Organic Light-Emitting Diode  
AU Tsuboyama, Akira; Iwakaki, Hironobu; Furugori, Manabu; Mukaide, Taihei; Kamatani, Jun; Igawa, Satoshi; Moriyama, Takashi; Miura, Seishi; Takiguchi, Takao; Okada, Shinjiro; Hoshino, Mikio; Ueno, Kazunori  
CS OL Project, Canon Inc., Atsugi Kanagawa, 243-0193, Japan  
SO Journal of the American Chemical Society (2003), 125(42), 12971-12979  
CODEN: JACSAT; ISSN: 0002-7863

PB American Chemical Society  
DT Journal  
LA English  
OS CASREACT 139:381596  
AB

Phosphorescence studies of facial homoleptic cyclometalated Ir(III) complexes were carried out. The complexes studied have the general structure Ir(III)(C-N)<sub>3</sub>, where (C-N) is a monoanionic cyclometalating ligand: 2-(5-methylthiophen-2-yl)pyridinato, 2-(thiophen-2-yl)-5-trifluoromethylpyridinato, 2,5-di(thiophen-2-yl)pyridinato, 2,5-di(5-methylthiophen-2-yl)pyridinato, 2-(benzo[b]thiophen-2-yl)pyridinato, 2-(9,9-dimethyl-9H-fluoren-2-yl)pyridinato, 1-phenylisoquinolinato, 1-(thiophen-2-yl)isoquinolinato, or 1-(9,9-dimethyl-9H-fluoren-2-yl)isoquinolinato. Luminescence properties of all the complexes at 298 K in toluene are as follows: quantum yields of phosphorescence  $\Phi_p$  = 0.08-0.29, emission peaks  $\lambda_{max}$  = 558-652 nm, and emission lifetimes  $\tau$  = 0.74-4.7  $\mu$ s. Bathochromic shifts of the Ir(thpy)<sub>3</sub> family [the complexes with 2-(thiophen-2-yl)pyridine derivs.] are observed by introducing appropriate substituents, e.g., Me, trifluoromethyl, or thiophen-2-yl. However,  $\Phi_p$  of the red emissive complexes ( $\lambda_{max}$  > 600 nm) becomes small, caused by a significant decrease of the radiative rate constant,  $k_r$ . In contrast, the complexes with the 1-arylisoquinoline ligands have marked red shifts of  $\lambda_{max}$  and very high  $\Phi_p$  (0.19-0.26). These complexes possess dominantly 3MLCT (metal-to-ligand charge transfer) excited states and have  $k_r$  values .apprx.1 order of magnitude larger than those of the Ir(thpy)<sub>3</sub> family. An organic light-emitting diode (OLED) device that uses Ir(1-phenylisoquinolinato)<sub>3</sub> as a phosphorescent dopant produces very high efficiency (external quantum efficiency  $\eta_{ex}$  = 10.3% and power efficiency 8.0 lm/W at 100 cd/m<sup>2</sup>) and pure-red emission with 1931 CIE (Commission Internationale de L'Eclairage) chromaticity coordinates ( $x$  = 0.68,  $y$  = 0.32).

RE.CNT 51 THERE ARE 51 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 5 OF 32 CAPLUS COPYRIGHT 2008 ACS ON STN  
AN 2003:494585 CAPLUS  
DN 140:32970

TI Highly efficient red electrophosphorescent devices based on iridium isoquinoline complexes: Remarkable external quantum efficiency over a wide range of current

AU Su, Ying-Ju; Huang, Heh-Lung; Li, Chien-Le; Chien, Chin-Hsiung; Tao, Yu-Tai; Chou, Pi-Tai; Datta, Swarup; Liu, Rai-Shung  
CS Department of Chemistry, National Tsinghua University, Hsinchu, 30043, Taiwan

SO Advanced Materials (Weinheim, Germany) (2003), 15(11), 884-888  
CODEN: ADVMEW; ISSN: 0935-9648

PB Wiley-VCH Verlag GmbH & Co. KGaA  
DT Journal  
LA English

AB Outstanding performance as an emissive dopant in organic light-emitting devices is shown by red phosphorescent Ir complexes based on an isoquinoline framework. Remarkably high efficiency can be maintained in the devices at high currents with a negligible effect from either triplet-triplet (T-T) annihilation or saturation of the excited states.

RE.CNT 30 THERE ARE 30 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 6 OF 32 CAPLUS COPYRIGHT 2008 ACS ON STN  
AN 2003:391359 CAPLUS  
DN 139:117521

TI Synthesis and Characterization of Facial and Meridional Tris-cyclometalated Iridium(III) Complexes

AU Tamayo, Arnold B.; Alleyne, Bert D.; Djurovich, Peter I.; Lamansky,  
Sergey; Tsyba, Irina; Ho, Nam N.; Bau, Robert; Thompson, Mark E.  
CS Department of Chemistry, University of Southern California, Los Angeles,  
CA, 90089-0744, USA

SO Journal of the American Chemical Society (2003), 125(24),  
7377-7387

CODEN: JACSAT; ISSN: 0002-7863

PB American Chemical Society

DT Journal

LA English

OS CASREACT 139:117521

AB The synthesis, structures, electrochem., and photophysics of facial (fac) and meridional (mer) tris-cyclometalated Ir(III) complexes are reported. The complexes have the general formula  $\text{Ir}(\text{C.cxa.N})_3$  [where C.cxa.N is a monoanionic cyclometalating ligand; 2-phenylpyridyl (ppy), 2-(p-tolyl)pyridyl (tpy), 2-(4,6-difluorophenyl)pyridyl (46dfppy), 1-phenylpyrazolyl (ppz), 1-(4,6-difluorophenyl)pyrazolyl (46dfppz), or 1-(4-trifluoromethylphenyl)pyrazolyl (tfmppz)]. Reaction of the dichloro-bridged dimers  $[(\text{C.cxa.N})_2\text{Ir}(\mu\text{-Cl})_2\text{Ir}(\text{C.cxa.N})_2]$  with 2 equiv of  $\text{HC.cxa.N}$  at 140–150° forms the corresponding meridional isomer, while higher reaction temps. give predominantly the facial isomer. Both facial and meridional isomers can be obtained in good yield (>70%). The meridional isomer of  $\text{Ir}(\text{tpy})_3$  and facial and meridional isomers of  $\text{Ir}(\text{ppz})_3$  and  $\text{Ir}(\text{tfmppz})_3$  were structurally characterized using x-ray crystallog. The facial isomers have nearly identical bond lengths (average  $\text{Ir-C} = 2.018 \text{ \AA}$ , average  $\text{Ir-N} = 2.123 \text{ \AA}$ ) and angles. The three meridional isomers have the expected bond length alternations for the differing trans influences of Ph and pyridyl/pyrazolyl ligands. Bonds that are trans to Ph groups are longer ( $\text{Ir-C}$  average =  $2.071 \text{ \AA}$ ,  $\text{Ir-N}$  average =  $2.031 \text{ \AA}$ ) than when they are trans to heterocyclic groups. The  $\text{Ir-C}$  and  $\text{Ir-N}$  bonds with trans N and C, resp., have bond lengths very similar to those observed for the corresponding facial isomers. DFT calcs. of both the singlet (ground) and the triplet states of the compds. suggest that the HOMO levels are a mixture of Ir and ligand orbitals, while the LUMO is predominantly ligand-based. All of the complexes show reversible oxidation between 0.3 and 0.8 V, vs.  $\text{Fc}/\text{Fc}^+$ . The meridional isomers are easier to oxidize by  $\sim 50\text{--}100 \text{ mV}$ . The phenylpyridyl-based complexes have reduction potentials between  $-2.5$  and  $-2.8 \text{ V}$ , whereas the phenylpyrazolyl-based complexes exhibit no reduction up to the solvent limit of  $-3.0 \text{ V}$ . All of the compds. have intense absorption bands in the UV region assigned into  $1(\pi \rightarrow \pi^*)$  transitions and weaker MLCT (metal-to-ligand charge transfer) transitions that extend to the visible region. The MLCT transitions of the pyrazolyl-based complexes are hypsochromically shifted relative to those of the pyridyl-based compds. The phenylpyridyl-based  $\text{Ir}(\text{III})$  tris-cyclometalates exhibit intense emission both at room temperature and at 77 K, whereas the phenylpyrazolyl-based derivs. emit strongly only at 77 K. The emission energies and lifetimes of the phenylpyridyl-based complexes ( $450\text{--}550 \text{ nm}$ ,  $2\text{--}6 \mu\text{s}$ ) and phenylpyrazolyl-based compds. ( $390\text{--}440 \text{ nm}$ ,  $14\text{--}33 \mu\text{s}$ ) are characteristic for a mixed ligand-centered/MLCT excited state. The meridional isomers for both pyridyl and pyrazolyl-based cyclometalates show markedly different spectroscopic properties than do the facial forms. Isolated samples of mer- $\text{Ir}(\text{C.cxa.N})_3$  complexes can be thermally and photochem. converted to facial forms, indicating that the meridional isomers are kinetically favored products. The lower thermodyn. stabilities of the meridional isomers are likely related to structural features of these complexes; i.e., the meridional configuration places strongly trans influencing Ph groups opposite each other, whereas all three Ph groups are opposite pyridyl or pyrazolyl groups in the facial complexes. The strong trans influence of the Ph groups in the meridional isomers leads to the observation that they are easier to oxidize, exhibit broad, red shifted emission, and have lower quantum efficiencies than their facial

counterparts.

RE.CNT 76 THERE ARE 76 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 7 OF 32 CAPLUS COPYRIGHT 2008 ACS on STN  
AN 2003:373899 CAPLUS  
DN 138:392822  
TI Light emitting polymer composition, and organic electroluminescence device  
and production process thereof  
IN Sakakibara, Mitsuhiro; Yasuda, Hiroyuki; Negoro, Yasunori  
PA JSR Corporation, Japan  
SO Eur. Pat. Appl., 20 pp.  
CODEN: EPXXDW  
DT Patent  
LA English  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 1311138	A1	20030514	EP 2002-24822	20021107 <--
	EP 1311138	B1	20040929		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, SK				
	JP 2003221484	A	20030805	JP 2002-314421	20021029 <--
	JP 3896947	B2	20070322		
	US 20030116788	A1	20030626	US 2002-290370	20021108 <--
	US 6872474	B2	20050329		
PRAI	JP 2001-344253	A	20011109		
	JP 2001-344254	A	20011109		

OS MARPAT 138:392822

AB A light emitting polymer composition is described comprising a polymer component and a phosphorescent agent contained in the polymer component, wherein the polymer component is composed of a hole transporting component formed from 50 to 99 mol% of a hole transporting monomer and an electron transporting component formed from 50 to 1 mol% of an electron transporting monomer. The polymer component is a copolymer composed of 50 to 99 mol% of structural units derived from the hole transporting monomer and 50 to 1 mol% of structural units derived from the electron transporting monomer, or is composed of a hole transporting polymer obtained from the hole transporting monomer and an electron transporting polymer obtained from the electron transporting monomer, and a proportion of the hole transporting polymer to the electron transporting polymer is 50:50 to 99:1 in terms of a molar ratio reduced to the monomers. An organic electroluminescence device is also described comprising a functional organic material layer which functions as a light emitting layer or hole transport layer and is formed by a light emitting polymer composition comprising the polymer component and the phosphorescent agent contained in the polymer component. A method of fabricating the organic electroluminescence device is also described.

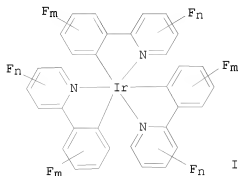
RE.CNT 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 8 OF 32 CAPLUS COPYRIGHT 2008 ACS on STN  
AN 2003:300704 CAPLUS  
DN 138:321402  
TI Preparation of iridium complexes with fluorinated 2-phenylpyridine for  
electroluminescent devices  
IN Hirata, Hiroki; Sugino, Maki; Ogi, Katsumi  
PA Mitsubishi Materials Corp., Japan  
SO Jpn. Kokai Tokkyo Koho, 13 pp.  
CODEN: JKXXAF  
DT Patent  
LA Japanese



FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2003113190	A	20030418	JP 2002-67918	20020313 <--
	JP 3991726	B2	20071017		
PRAI	JP 2001-230756	A	20010731		
OS	MARPAT 138:321402				
GI					



AB In preparation of title complexes I ( $m, n = 0-1; m + n = 1$ ) from Ir(III) acetylacetonate (II) and monofluorinated 2-phenylpyridine, the monofluoro compound is prepared in THF by treatment of FC6H4X (X = Cl, Br, iodine) with (A) organolithium compound and ZnCl<sub>2</sub>, or (B) Mg, followed by condensation of the resulting FC6H4ZnCl or Grignard reagent, resp., with 2-halopyridine. E.g., a THF solution of 3-FC6H4Br was treated with BuLi/hexane, THF solution of ZnCl<sub>2</sub>, a mixture of 2-bromopyridine, Pd catalyst, and THF, and then with II to give 62% L3Ir (where L = orthometalated 2-(3-fluorophenyl)pyridine), vs. 44%, when Et<sub>2</sub>O was used instead.

L5 ANSWER 9 OF 32 CAPLUS COPYRIGHT 2008 ACS on STN

AN 2003:300702 CAPLUS

DN 138:321401

TI Preparation of electroluminescent fluorophenylpyridine iridium complexes

IN Hirata, Hiroki; Sugino, Maki; Ogi, Katsumi

PA Mitsubishi Materials Corp., Japan

SO Jpn. Kokai Tokkyo Koho, 23 pp.

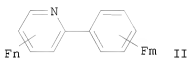
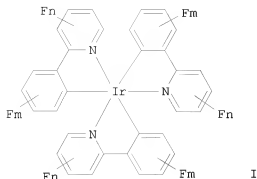
CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2003113164	A	20030418	JP 2002-67920	20020313 <--
	JP 3991728	B2	20071017		
PRAI	JP 2001-230757	A	20010731		
OS	CASREACT 138:321401; MARPAT 138:321401				
GI					



AB The complexes I ( $m, n = 0-4; 2 \leq m + n \leq 8$ ) are prepared by reaction of fluoro 2-phenylpyridines II ( $m, n =$  same as I) with Ir(III) acetylacetonate (III), wherein II are prepared from halobenzenes and halopyridines via organozinc compds. or Grignard reagents using THF as a solvent. 1-Bromo-4-fluorobenzene was treated with Mg in THF at  $40^\circ$  for 8 h, condensed with 5-fluoro-2-chloropyridine using Pd catalyst at  $10^\circ$  for 4 h, and treated with III in glycerin at  $190^\circ$  under 2.66 kPa for 10 h to give tris[5-fluoro-2-(4-fluorophenyl)pyridine]iridium.

L5 ANSWER 10 OF 32 CAPLUS COPYRIGHT 2008 ACS on STN

AN 2003:300700 CAPLUS

DN 138:321399

TI Fluorine-substituted iridium complexes, preparation of them, and their intermediates

IN Hirata, Hiroki; Sugino, Maki

PA Mitsubishi Materials Corp., Japan

SO Jpn. Kokai Tokkyo Koho, 14 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2003113161	A	20030418	JP 2002-67917	20020313 <--
	JP 3991725	B2	20071017		
PRAI	JP 2001-126506	A	20010424		
	JP 2001-230758	A	20010731		
OS	CASREACT 138:321399; MARPAT 138:321399				
GI					

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

AB The complexes I ( $m + n = 1$ ;  $0 \leq m \leq 1$ ;  $0 \leq n \leq 1$ ; F substitution occurs one position other than position 1, 6, 7, 10, and 12 to N atom), useful as organic electroluminescent materials (no data), are prepared by treating iridium(III) acetylacetonate with 2, 3, 4, 5, 8, 9, 10, or 11-fluoro-2-phenylpyridine. Fluoro-2-phenylpyridine II ( $m + n = 1$ ;  $0 \leq m \leq 1$ ;  $0 \leq n \leq 1$ ), 2-FC6H4ZnCl, and fluoro-2-pyridylmagnesium halides III ( $X = Cl, Br, I$ ) as intermediates for I are also claimed. A mixture of Mg and THF was treated with THF solution of PhBr at 50° for 3 h. The Grignard reagent was added dropwise to a mixture of 5-fluoro-2-chloropyridine and Pd catalyst and the mixture was further stirred at 40° for 2 h to give 5-fluoro-2-phenylpyridine. This was treated with Ir(III) acetylacetonate in glycerin at 2.66 kPa and 190° for 10 h to give (5-fluoro-2-phenylpyridine)3Ir.

L5 ANSWER 11 OF 32 CAPLUS COPYRIGHT 2008 ACS on STN

AN 2003:234684 CAPLUS

DN 139:69358

TI Selective one-pot synthesis of facial tris-ortho-metallated iridium(III) complexes using microwave irradiation

AU Konno, Hideo; Sasaki, Yoshiyuki

CS Natl. Inst. of Adv. Ind. Sci. and Technol. (AIST), Ibaraki, 305-8569, Japan

SO Chemistry Letters (2003), 32(3), 252-253

CODEN: CMLTAG; ISSN: 0366-7022

PB Chemical Society of Japan

DT Journal

LA English

OS CASREACT 139:69358

AB We report on a novel method for the production of two facial tris-ortho-metallated iridium(III) complexes, fac-[Ir(ppy)3] ((1) ppyH = 2-phenylpyridine) and fac-[Ir(tpy)3] ((2) tpyH = 2-(p-tolyl)pyridine), by reaction of IrCl3·3H2O with a large excess of the corresponding 2-arylpyridine under microwave irradiation. The method does not require a dehalogenating reagent such as AgCF3SO3, and facial tris-orthometallated iridium(III) complexes can be obtained rapidly, selectively and efficiently.

RE.CNT 18 THERE ARE 18 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 12 OF 32 CAPLUS COPYRIGHT 2008 ACS on STN

AN 2002:964786 CAPLUS

DN 138:47038

TI Electroluminescent iridium compounds with fluorinated phenylpyridines, phenylpyrimidines, and phenylquinolines and devices made with such compounds

IN Grushin, Vladimir; Lecloux, Daniel D.; Petrov, Viacheslav. A.; Wang, Ying

PA E. I. Du Pont de Nemours & Co., USA

SO U.S. Pat. Appl. Publ., 21 pp., Cont.-in-part of U.S. Ser. No. 879,014.

CODEN: USXXCO

DT Patent

LA English

FAN.CNT 4

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 20020190250	A1	20021219	US 2001-27421	20011220 <--
	US 6670645	B2	20031230		
	US 20020121638	A1	20020905	US 2001-879014	20010612 <--
EP	1424382	A2	20040602	EP 2004-4541	20010627
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI, CY, TR				
	EP 1431288	A2	20040623	EP 2004-4542	20010627
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,				

IE, FI, CY, TR  
 EP 1431289 A2 20040623 EP 2004-4543 20010627  
 R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,  
 IE, FI, CY, TR  
 CA 2455844 A1 20030731 CA 2001-2455844 20011226 <--  
 WO 2003063555 A1 20030731 WO 2001-US49522 20011226 <--  
 W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,  
 CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,  
 GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR,  
 LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PH, PL,  
 PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG,  
 US, UZ, VN, YU, ZA, ZW  
 RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY,  
 KG, KZ, MD, RU, TJ, TM, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB,  
 GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA,  
 GN, GQ, GW, ML, MR, NE, SN, TD, TG  
 CN 1520702 A 20040811 CN 2001-823216 20011226  
 EP 1466506 A1 20041013 EP 2001-991428 20011226  
 R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,  
 IE, SI, LT, LV, FI, RO, MK, CY, AL, TR  
 JP 2005516040 T 20050602 JP 2003-563272 20011226  
 TW 238819 B 20050901 TW 2001-90133244 20011231  
 US 20040089867 A1 20040513 US 2003-696349 20031029  
 US 7276726 B2 20071002  
 US 20040106007 A1 20040603 US 2003-696095 20031029  
 US 7075102 B2 20060711  
 US 20040108507 A1 20040610 US 2003-696003 20031029  
 US 6946688 B2 20050920  
 US 20040188673 A1 20040930 US 2003-696060 20031029  
 US 7129518 B2 20061031  
 US 20040191959 A1 20040930 US 2003-696401 20031029  
 US 7078725 B2 20060718  
 US 20040094769 A1 20040520 US 2003-699411 20031030  
 US 7199392 B2 20070403  
 PRAI US 2000-215362P P 20000630  
 US 2000-224273P P 20000810  
 US 2001-879014 A2 20010612  
 EP 2001-950576 A3 20010627  
 US 2001-27421 A3 20011220  
 WO 2001-US49522 W 20011226  
 OS MARPAT 138:47038  
 AB Ir(III) compds. with substituted 2-phenylpyridines, phenylpyrimidines, and  
 phenylquinolines, and devices, especially electroluminescent devices, that are  
 made with the Ir(III) compds., are described. Precursor ligands for the  
 devices are also described.  
 L5 ANSWER 13 OF 32 CAPLUS COPYRIGHT 2008 ACS on STN  
 AN 2002:893926 CAPLUS  
 DN 138:311205  
 TI Optical and electroluminescent properties of a new green emitting Ir(III)  
 complex  
 AU Das Rupasree, R.; Lee, Chang-Lyoul; Noh, Yong-Young; Kim, Jang-Joo  
 CS Department of Materials Science and Engineering, Kwangju Institute of  
 Science and Technology, Kwangju, 500712, S. Korea  
 SO Optical Materials (Amsterdam, Netherlands) (2003), 21(1-3),  
 143-146  
 CODEN: OMATET; ISSN: 0925-3467  
 PB Elsevier Science B.V.  
 DT Journal  
 LA English  
 AB The authors synthesized and characterized a new green Ir(III) complex,  
 Ir(mpp)3, with the ligand 3-methyl-2-phenylpyridine (Hmpp) and fabricated

phosphorescent light emitting devices with the complex as a triplet emissive dopant in PVK. The PL and EL spectra of the PVK film doped with the complex confirm an efficient energy transfer from carbazole excimer to Ir complex. The device showed a maximum external quantum efficiency of 4.5% for 2% Ir(mpp)3 doping concns., and a peak luminance of 25,000 cd/m2. The device demonstrates the effect brought in by the fine-tuning of the ligand, 2-phenylpyridine as the Me substitution in the pyridine ring.

RE.CNT 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 14 OF 32 CAPLUS COPYRIGHT 2008 ACS on STN

AN 2002:752364 CAPLUS

DN 137:286117

TI Polymeric phosphorescent metal complexes and polymer light-emitting devices employing the complexes

IN Ikehira, Hideyuki; Ueoka, Takahiro; Doi, Shuji; Kurita, Yasuyuki

PA Sumitomo Chemical Company, Limited, Japan

SO Eur. Pat. Appl., 49 pp.

CODEN: EPXXDW

DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 1245659	A1	20021002	EP 2002-6665	20020326 <--
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
	SG 92833	A1	20021119	SG 2002-1515	20020320 <--
	US 20020193532	A1	20021219	US 2002-103848	20020325 <--
	JP 2003171659	A	20030620	JP 2002-86099	20020326 <--
	JP 4048810	B2	20080220		
	JP 2007182458	A	20070719	JP 2007-101555	20070409
	JP 2007277558	A	20071025	JP 2007-101554	20070409
	JP 2008019443	A	20080131	JP 2007-185416	20070717
PRAI	JP 2001-89623	A	20010327		
	JP 2001-302909	A	20010928		
	JP 2002-86099	A3	20020326		

AB Polymeric light-emitting substances having a polystyrene reduced number-average mol. weight of 103-108 are described which comprise in the main chain or side chain a metal complex structure showing light emission from the triplet excited state. Methods of producing the polymeric light-emitting substances involving catalytic copolymerization are discussed. Complexes of formula (L)o-M-(Ar)m-X are described where M = a metal with atomic number  $\geq 50$  and showing a possibility of intersystem crossing between the singlet state and the triplet state in this complex by a spin-orbital mutual action; Ar = a ligand bonded to M via  $\geq 1$  of a N, O, C, S and P atom, with bonding to a polymer at an arbitrary position; L represents a H, hydrocarbon group with 1-10 C atoms, carboxylate group with 1-10 C atoms, diketonate group with 1-10 C atoms, halogen atom, amide group, imide group, alkoxide group, alkylmercapto group, carbonyl ligand, arylene ligand, alkene ligand, alkyne ligand, amine ligand, imine ligand, nitrile ligand, isonitrile ligand, phosphine ligand, phosphine oxide ligand, phosphite ligand, ether ligand, sulfone ligand, sulfoxide ligand or sulfide ligand; m = integer of 1-5; o = integer of 0-5. ; and X is a halogen atom, arylsulfonyloxy group, or alkylsulfonyloxy group. Polymer light-emitting devices employing the luminescent polymer metal complexes are also discussed.

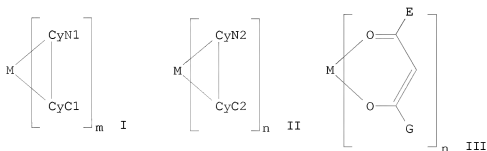
RE.CNT 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 15 OF 32 CAPLUS COPYRIGHT 2008 ACS on STN

AN 2002:693261 CAPLUS

DN 137:239825  
 TI Metal coordination compound, luminescence device and display apparatus  
 IN Tsuboyama, Akira; Okada, Shinjiro; Takiguchi, Takao; Miura, Seishi;  
 Moriyama, Takashi; Kamatani, Jun; Furugori, Manabu  
 PA Canon Kabushiki Kaisha, Japan  
 SO Eur. Pat. Appl., 38 pp.  
 CODEN: EPXXDW  
 DT Patent  
 LA English  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 1239526	A2	20020911	EP 2002-5113	20020307 <--
	EP 1239526	A3	20040407		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
	JP 2002332292	A	20021122	JP 2002-42440	20020220 <--
	US 20030068536	A1	20030410	US 2002-90838	20020306 <--
	US 6974639	B2	20051213		
	US 20060022588	A1	20060202	US 2005-202113	20050812
	US 7354662	B2	20080408		
PRAI	JP 2001-64204	A	20010308		
	JP 2002-42440	A	20020220		
	US 2002-90838	A3	20020306		
OS	MARPAT 137:239825				
GI					



AB An electroluminescence device having a layer containing a specific metal coordination compound is provided. The metal coordination compound is represented by:  $\text{MLmL'n}$  ( $\text{M} = \text{Ir, Pt, Rh, Pd}$ ;  $\text{L}$  and  $\text{L'}$  = mutually different bidentate ligands;  $m = 1-3$ ;  $n = 0-2$ ;  $m+n = 2$  or  $3$ ); a partial structure  $\text{MLm} = \text{I}$ , a partial structure  $\text{ML'n} = \text{II}$  or  $\text{III}$  ( $\text{CyN1}$  and  $\text{CyN2}$  = cyclic group capable of having a substituent, including a nitrogen and bonded to the metal  $\text{M}$  via the nitrogen atom;  $\text{CyC1}$  and  $\text{CyC2}$  = cyclic group capable of having a substituent, including a carbon atom and bonded to the metal atom  $\text{M}$  via the carbon atom; the optional substituent of the cyclic groups is halogen, cyano group, nitro group,  $\text{C1-8 trialkylsilyl}$ , etc.;  $\text{E}$  and  $\text{G} = \text{C1-20 alkyl}$ ). The metal coordination compound of  $\text{MLmL'n}$  is characterized by having at least one aromatic substituent for at least one of  $\text{CyN1}$ ,  $\text{CyN2}$ ,  $\text{CyC1}$  and  $\text{CyC2}$ . The metal coordination compound having the aromatic substituent is effective in providing high-efficiency luminescence, long-term high luminance, and less deterioration by current passing.

L5 ANSWER 16 OF 32 CAPLUS COPYRIGHT 2008 ACS on STN  
 AN 2002:594856 CAPLUS  
 DN 137:140633  
 TI Method for the production of highly pure, tris-ortho-metalated

organo-iridium compounds  
 IN Stoessel, Philipp; Spreitzer, Hubert; Becker, Heinrich  
 PA Covion Organic Semiconductors GmbH, Germany  
 SO PCT Int. Appl., 29 pp.  
 CODEN: PIXXD2

DT Patent  
 LA German

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2002060910	A1	20020808	WO 2002-EP920	20020130 <--
	W: CN, JP, KR, US				
	RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR				
	DE 10104426	A1	20020808	DE 2001-10104426	20010201 <--
	EP 1366054	A1	20031203	EP 2002-710817	20020130 <--
	EP 1366054	B1	20050406		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI, CY, TR				
	JP 2004526700	T	20040902	JP 2002-561478	20020130
	JP 3984167	B2	20071003		
	CN 1527835	A	20040908	CN 2002-804212	20020130
	CN 1781926	A	20060607	CN 2005-10127217	20020130
	US 20040077862	A1	20040422	US 2003-470811	20031124
	US 7084273	B2	20060801		
	US 20060252936	A1	20061109	US 2006-483359	20060707
PRAI	DE 2001-10104426	A	20010201		
	CN 2002-804212	A3	20020130		
	WO 2002-EP920	W	20020130		
	US 2003-470811	A1	20031124		
OS	CASREACT 137:140633; MARPAT 137:140633				
AB	The invention relates to a method for the production of highly pure tris-ortho-metalated organo-iridium compds. and to pure metal-organic compds. (especially d8 metal compds.) which can be used in the near future as active components (functional materials) serving as chromophoric components in a series of different applications that can be included within the electronics industry in the broadest sense. Thus, reaction of iridium(III) acetylacetonate with 2-phenylpyridine in ethylene glycol at 200-210° gave 96% fac-tris[2-(2-pyridyl-κN)phenyl-κC]iridium(III) after treatment with 1N HCl. The product obtained was 99.9% pure.				

RE.CNT 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 17 OF 32 CAPLUS COPYRIGHT 2008 ACS on STN  
 AN 2002:450073 CAPLUS  
 DN 137:40190

TI Deuterated semiconducting organic compounds used for optoelectronic devices

IN Li, Xiao-Chang Charles; Ueno, Kazunori  
 PA Canon Kabushiki Kaisha, Japan  
 SO PCT Int. Appl., 36 pp.  
 CODEN: PIXXD2

DT Patent  
 LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2002047440	A1	20020613	WO 2001-US46282	20011206 <--
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR,				

LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW

RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

US 20020076576 A1 20020620 US 2000-732511 20001207 <--

US 6579630 B2 20030617

AU 2002027201 A 20020618 AU 2002-27201 20011206 <--

EP 1342392 A1 20030910 EP 2001-996091 20011206 <--

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR

JP 2004515506 T 20040527 JP 2002-549032 20011206

JP 4065521 B2 20080326

US 20030129439 A1 20030710 US 2003-347680 20030122 <--

US 6699599 B2 20040302

US 20030134140 A1 20030717 US 2003-347681 20030122 <--

US 6677060 B2 20040113

US 20030138657 A1 20030724 US 2003-347682 20030122 <--

US 6686067 B2 20040203

FRA1 US 2000-732511 A 20001207

WO 2001-US46282 W 20011206

AB Organic semiconductors are described which comprise a linear conjugated organic compound or a polymer, a cyclic ring, a fused cyclic ring, a heterocyclic ring, a fused heterocyclic ring, a chelate or organometallic material described by the general formula CaMb (C = conjugated chromophore; M = Li, Na, K, Be, Mg, Ca, Ti, Cr, Mo, Mn, Fe, Ru, Os, Co, Rh, Ir, Ni, Pd, Pt, Cu, Zn, Cd, B, Al, Ga, In, Si, N, or P; and a and b = independently 1-10) wherein protons linked to the conjugated bonds are partially or fully deuterated. Preferably, the chromophore has  $\geq 5$  conjugated bonds. The semiconductor may be luminescent or promote energy transfer and it may have charge injection, hole blocking, or exciton blocking properties. Organic electroluminescent devices employing the semiconductors are also described.

RE.CNT 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 18 OF 32 CAPLUS COPYRIGHT 2008 ACS on STN

AN 2002:428917 CAPLUS

DN 137:26190

TI Electroluminescence element and electroluminescent display device containing the same

IN Kamatani, Jun; Okada, Shinjiro; Tsuboyama, Akira; Takiguchi, Takao; Miura, Seishi; Noguchi, Koji; Moriyama, Takashi; Igawa, Satoshi; Furugori, Manabu

PA Canon Kabushiki Kaisha, Japan

SO PCT Int. Appl., 143 pp.

CODEN: PIXXD2

DT Patent

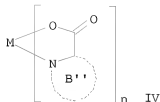
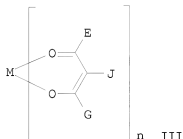
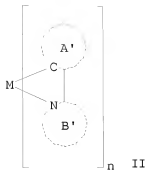
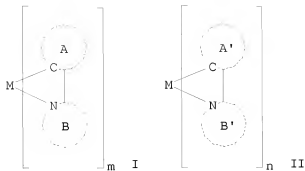
LA Japanese

FAN.CNT 2

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 2002044189	A1	20020606	WO 2001-JP10487	20011130 <--
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				



AU 2002022566	A	20020611	AU 2002-22566	20011130 <--
EP 1348711	A1	20031001	EP 2001-998553	20011130 <--
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,				
IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
CN 1474826	A	20040211	CN 2001-819112	20011130
CN 1781925	A	20060607	CN 2005-10125184	20011130
EP 1881050	A2	20080123	EP 2007-120391	20011130
EP 1881050	A3	20080402		
R: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LI, LU, MC,				
NL, PT, SE, TR				
EP 1889891	A2	20080220	EP 2007-120387	20011130
EP 1889891	A3	20080326		
R: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LI, LU, MC,				
NL, PT, SE, TR				
US 20030068526	A1	20030410	US 2002-73012	20020212 <--
US 7147935	B2	20061212		
KR 750756	B1	20070820	KR 2003-707223	20030529
US 20060177694	A1	20060810	US 2006-329181	20060111
KR 803805	B1	20080214	KR 2007-701971	20070126
US 20070212570	A1	20070913	US 2007-688580	20070320
US 20070216294	A1	20070920	US 2007-694754	20070330
KR 2007087038	A	20070827	KR 2007-715888	20070712
KR 798561	B1	20080128		
KR 2007087039	A	20070827	KR 2007-715889	20070712
KR 2007087040	A	20070827	KR 2007-715890	20070712
KR 2007087041	A	20070827	KR 2007-715891	20070712
KR 825182	B1	20080424		
KR 2007087042	A	20070827	KR 2007-715892	20070712
KR 825183	B1	20080424		
KR 2007087043	A	20070827	KR 2007-715893	20070712
KR 798562	B1	20080131		
FRAI JP 2000-364650	A	20001130		
JP 2001-64205	A	20010308		
JP 2001-128928	A	20010426		
CN 2001-819112	A3	20011130		
EP 2001-998553	A3	20011130		
WO 2001-JP10487	W	20011130		
US 2002-73012	A3	20020212		
KR 2003-707223	A3	20030529		
US 2006-329181	A3	20060111		
KR 2007-701971	A3	20070126		
OS	MARPAT 137:26190			
GI				



AB The invention relates to a luminescent element characterized by having a layer containing a metal coordination compound which has a partial structure

MLm represented by the following general formula I (A, B = isoquinolyl group residue; M = metal) and which as a whole is preferably represented by the following formula MLmLn (M=Ir, Pt, Rh, Pd; m = 1, 2, 3; n = 0, 1, 2; MLm = compound I; ML'n = compound II-IV; A', B', B'' = ring group residue; E, G = C1-20 alkyl; J = H, C1-20 alkyl). The luminescence element shows the high luminescent efficiency and the good stability.

RE.CNT 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 19 OF 32 CAPLUS COPYRIGHT 2008 ACS on STN  
AN 2002:268568 CAPLUS  
DN 136:310035  
TI Preparation of ortho-metalated iridium complexes or their tautomers  
IN Kimura, Keizo; Igarashi, Tatsuya  
PA Fuji Photo Film Co., Ltd., Japan  
SO Jpn. Kokai Tokkyo Koho, 17 pp.  
CODEN: JKXXAF  
DT Patent  
LA Japanese  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2002105055	A	20020410	JP 2000-298529	20000929 <--
PRAI	JP 2000-298529		20000929		
OS	MARPAT 136:310035				
GI					

AB Ir complexes I [Z11, Z12, Z21, Z22 = nonmetallic atomic group required to form a 5-6-membered (un)substituted (condensed) ring; L1, L2 = direct bond, divalent group; Y1, Y2 = N, C; if Y1 = N, then Q1 = direct bond; if Y1 = C, then Q1 = double bond; if Y2 = N, then Q2 = direct bond; if Y2 = C, then Q2 = double bond] or their tautomers, useful as electroluminescent materials (no data), are prepared from Ir compds. II (Z11, Z12, L1, Y1, Q1 = same as above; R1, R3 = aliphatic group, aryl, heterocyclyl; R2 = H, substituent; R1 and R2 or R2 and R3 may be bonded together to form a ring) or their tautomers. II or their tautomers are prepared by hexahaloiridate(III) salts or hexahaloiridate(IV) salts via diiridium complexes III (X = halo; Z11, Z12, Q1, L1 = same as above) or their tautomers. A mixture of K3IrCl6, 2-phenylpyridine, and glycerol was stirred at 180° for 2 h to give diiridium complex. MeOH solution of NaOMe was added dropwise to a mixture of the complex, AcCH2COMe, and CHCl3 at room temperature over 20 min and the reaction mixture was further stirred at room temperature for 5 h to give II (R1 = R3 = Me, R2 = H, CQ1Y1Z11 = benzene ring; L1 = direct bond, Z12 makes a pyridine ring together with N). This acetylacetonato complex was further treated with 2-phenylpyridine in glycerin at 170° for 2 h to give tris(2-phenylpyridine)iridium.

L5 ANSWER 20 OF 32 CAPLUS COPYRIGHT 2008 ACS on STN

AN 2002:237969 CAPLUS

DN 136:286688

TI Electroluminescent display device with high brightness and efficiency comprising metal coordination compound

IN Takiguchi, Takao; Mizutani, Hidemasa; Okada, Shinjiro; Tsuboyama, Akira; Miura, Seishi; Moriyama, Takashi; Igawa, Satoshi; Kamatani, Jun; Furugori, Manabu

PA Canon Kabushiki Kaisha, Japan

SO Eur. Pat. Appl., 49 pp.

CODEN: EPXXDW

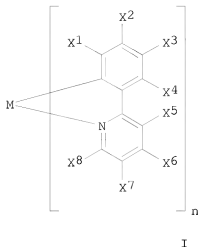
DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 1191613	A2	20020327	EP 2001-122938	20010925 <--
	EP 1191613	A3	20020717		
	EP 1191613	B1	20060329		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	JP 2003146996	A	20030521	JP 2001-284599	20010919 <--
	US 20020064681	A1	20020530	US 2001-961075	20010924 <--
	US 6815091	B2	20041109		
	EP 1598879	A2	20051123	EP 2005-18186	20010925
	EP 1598879	A3	20080514		
	R: DE, FR, GB				
	US 20050014025	A1	20050120	US 2004-912128	20040806
	US 7026062	B2	20060411		
	US 20060014047	A1	20060119	US 2005-226258	20050915
PRAI	JP 2000-292492	A	20000926		
	JP 2000-292493	A	20000926		
	JP 2000-358741	A	20001127		
	JP 2000-358742	A	20001127		
	JP 2001-255537	A	20010827		
	JP 2001-284599	A	20010919		
	US 2001-961075	A3	20010924		
	EP 2001-122938	A3	20010925		
	US 2004-912128	A3	20040806		
OS	MARPAT 136:286688				

GI



AB A luminescence device is principally constituted by a pair of electrodes and an organic compound layer disposed between. The layer contains a metal coordination compound represented by the formula I (M = Ir, Rh, Pd; n = 2, 3; X1-X8 = halogen, nitro, trifluoromethyl, C1-8-trialkylsilyl, C2-20-alkyl capable of including one or two non-neighboring methylene groups which can be replaced with -O-, -S-, -CO-, -CO-O-, -O-CO-, -CH=CH-, -C.tpbond.C- and capable of including hydrogen atom which can be replaced with fluorine atom; with the proviso that at least one of X1 to X8 is a substituent other than hydrogen atom, and X2 and X3 cannot be fluorine atom at the same time). The object of the present invention is to provide an electroluminescence device capable of providing a high-efficiency luminescent state at a high brightness (or luminance) for a long period while minimizing the deterioration in luminescence in energized state.

L5 ANSWER 21 OF 32 CAPLUS COPYRIGHT 2008 ACS on STN

AN 2002:221136 CAPLUS

DN 136:254380

TI Organometallic complexes as phosphorescent emitters in organic LEDs

IN Thompson, Mark E.; Djurovich, Peter; Lamansky, Sergey; Murphy, Drew; Kwong, Raymond; Abdel-Razzaq, Feras; Forrest, Stephen R.; Baldo, Marc A.; Burrows, Paul E.

PA The Trustees of Princeton University, USA; The University of Southern California

SO U.S. Pat. Appl. Publ., 77 pp., Cont.-in-part of U. S. Ser. No. 274,609, abandoned.

CODEN: USXXCO

DT Patent

LA English

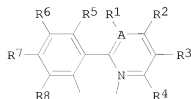
FAN.CNT 5

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 20020034656	A1	20020321	US 2001-883734	20010618 <--
	US 6830828	B2	20041214		
	US 6097147	A	20000801	US 1998-153144	19980914 <--
	US 1729327	A1	20061206	EP 2006-16911	20000511
	R: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LI, LU, MC, NL, PT, SE, AL, LT, LV, MK, RO, SI				
	CN 1840607	A	20061004	CN 2005-10109631	20001129
	EP 1933395	A1	20080618	EP 2008-3327	20001129

R: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LI, LU, MC,  
NL, PT, SE, TR, AL, LT, LV, MK, RO, SI

US	20030017361	A1	20030123	US	2002-171235	20020613 <--
US	6902830	B2	20050607			
US	20040262576	A1	20041230	US	2004-870788	20040616
US	7001536	B2	20060221			
JP	2005344124	A	20051215	JP	2005-241794	20050823
US	20060029829	A1	20060209	US	2005-233605	20050922
US	7291406	B2	20071106			
JP	2007254755	A	20071004	JP	2007-140927	20070528
US	20070296332	A1	20071227	US	2007-879379	20070716
PRA1	US 1998-153144	A2	19980914			
	US 1999-274609	B2	19990323			
	US 1999-311126	B2	19990513			
	US 1999-452346	B2	19991201			
EP	2000-932308	A3	20000511			
JP	2000-619011	A3	20000511			
CN	2000-817482	A3	20001129			
EP	2000-980863	A3	20001129			
JP	2001-541304	A3	20001129			
US	2001-883734	A3	20010618			
US	2002-171235	A3	20020613			
US	2004-870788	A1	20040616			
US	2005-233605	A1	20050922			
OS	MARPAT 136:254380					
AB	Emissive layers of organic light-emitting devices are described which comprise a phosphorescent organometallic compound for enhancing the quantum efficiency of the organic light-emitting device. Preferably the emissive mol. is selected from the group of phosphorescent organometallic complexes, including cyclometallated platinum, iridium, and osmium complexes. The organic light-emitting devices optionally contain an exciton blocking layer. In particular, organic light-emitting devices with an emitter layer comprising organometallic complexes of transition metals of formula L2MX, wherein L and X are distinct bidentate ligands and M is a metal which forms octahedral complexes, are described. A method of making a composition of the formula L2MX is described which entails combining a bridged dimer of formula L2M( $\mu$ -Cl)2ML2 with a Bronsted acid XH to make the desired organometallic complex. Display devices incorporating the light-emitting devices are also described.					
RE.CNT	170	THERE ARE 170 CITED REFERENCES AVAILABLE FOR THIS RECORD				
		ALL CITATIONS AVAILABLE IN THE RE FORMAT				
L5	ANSWER 22 OF 32 CAPLUS COPYRIGHT 2008 ACS on STN					
AN	2002:31593 CAPLUS					
DN	136:93307					
TI	Electroluminescent iridium compounds with fluorinated phenylpyridines, phenylpyrimidines, and phenylquinolines and devices made with such compounds					
IN	Petrov, Viacheslav A.; Wang, Ying; Grushin, Vladimir					
PA	E. I. Du Pont de Nemours & Co., USA					
SO	PCT Int. Appl., 41 pp.					
	CODEN: PIXXD2					
DT	Patent					
LA	English					
FAN.CNT	4					
	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE	
	-----	-----	-----	-----	-----	
PI	WO 2002002714	A2	20020110	WO 2001-US20539	20010627 <--	
	WO 2002002714	A3	20021024			
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS,					

LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO,  
 RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ,  
 VN, YU, ZA, ZW  
 RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY,  
 DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF,  
 BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG  
 CA 2411624 A1 20020110 CA 2001-2411624 20010627 <--  
 AU 2001071550 A 20020114 AU 2001-71550 20010627 <--  
 EP 1295514 A2 20030326 EP 2001-950576 20010627 <--  
 EP 1295514 B1 20060802  
 R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,  
 IE, SI, LT, LV, FI, RO, MK, CY, AL, TR  
 JP 2004503059 T 20040129 JP 2002-507959 20010627  
 EP 1424382 A2 20040602 EP 2004-4541 20010627  
 R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,  
 IE, FI, CY, TR  
 EP 1431288 A2 20040623 EP 2004-4542 20010627  
 R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,  
 IE, FI, CY, TR  
 EP 1431289 A2 20040623 EP 2004-4543 20010627  
 R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,  
 IE, FI, CY, TR  
 AU 2001271550 B2 20050512 AU 2001-271550 20010627  
 AT 335386 T 20060815 AT 2001-950576 20010627  
 TW 593623 B 20040621 TW 2001-90115959 20010629  
 CA 2455844 A1 20030731 CA 2001-2455844 20011226 <--  
 WO 2003063555 A1 20030731 WO 2001-US49522 20011226 <--  
 W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,  
 CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,  
 GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR,  
 LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PH, PL,  
 PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG,  
 US, UZ, VN, YU, ZA, ZW  
 RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY,  
 KG, KZ, MD, RU, TJ, TM, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB,  
 GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA,  
 GN, GQ, GW, ML, MR, NE, SN, TD, TG  
 CN 1520702 A 20040811 CN 2001-823216 20011226  
 EP 1466506 A1 20041013 EP 2001-991428 20011226  
 R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,  
 IE, SI, LT, LV, FI, RO, MK, CY, AL, TR  
 JP 2005516040 T 20050602 JP 2003-563272 20011226  
 KR 838010 B1 20080612 KR 2002-717946 20021228  
 PRAI US 2000-215362P P 20000630  
 US 2000-224273P P 20000810  
 EP 2001-950576 A3 20010627  
 WO 2001-US20539 W 20010627  
 WO 2001-US49522 W 20011226  
 OS MARPAT 136:93307  
 GI



AB Organic electroluminescent devices are described which employ an emitting layer comprising  $\geq 20$  weight % of  $\geq 1$  compound described by the general formula  $\text{IrLaLbLcX}^{\text{L}}\text{yL}^{\text{z}}$  ( $x = 0$  or  $1$ ,  $y = 0$ ,  $1$ , or  $2$ , and  $z = 0$  or  $1$ , with the proviso that  $x = 0$  or  $y + z = 0$  and when  $y = 2$  then  $z = 0$ ;  $\text{L}' =$  a bidentate ligand or a monodentate ligand, and is not a phenylpyridine, phenylpyrimidine, or phenylquinoline with the proviso that: when  $\text{L}'$  is a monodentate ligand,  $y + z = 2$ , and when  $\text{L}'$  is a bidentate ligand,  $z = 0$ ;  $\text{L}'' =$  a monodentate ligand, and is not a phenylpyridine, and phenylpyrimidine, or phenylquinoline; and  $\text{La}$ ,  $\text{Lb}$ , and  $\text{Lc}$  the same or different compds. are described by the general formula I; adjacent pairs of  $\text{R1-4}$  and  $\text{R5-8}$  can be joined to form a five- or six-membered ring, at least one of  $\text{R1-8}$  is selected from  $\text{F}$ ,  $\text{CnF2n+1}$ ,  $\text{OCnF2n+1}$ , and  $\text{OCF2X}$ ;  $n = 1-6$ ; and  $\text{X} = \text{H}$ ,  $\text{Cl}$ , or  $\text{Br}$ , and  $\text{A} = \text{C}$  or  $\text{N}$ , provided that when  $\text{A} = \text{N}$ , there is no  $\text{R1}$ ). The electroluminescent compds. as well as selected substituted 2-phenylpyridines, phenylpyrimidines, and phenylquinolines that may be used to make the compds. are also described.

L5 ANSWER 23 OF 32 CAPLUS COPYRIGHT 2008 ACS on STN  
AN 2001:932827 CAPLUS

DN 136:61303

TI Organic electroluminescent devices using condensed heterocyclic rings  
IN Taguchi, Toshiki; Mishima, Masayuki; Ise, Toshihiro; Okada, Hisashi  
PA Fuji Photo Film Co., Ltd., Japan  
SO Jpn. Kokai Tokkyo Koho, 17 pp.

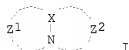
CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2001357977	A	20011226	JP 2000-175981	20000612 <--
PRAI	JP 2000-175981		20000612		
OS	MARPAT 136:61303				
GI					



AB The invention relates to an organic electroluminescent device comprising a pair of electrodes sandwiching  $\geq 1$  layer(s) containing  $\geq 1$  condensed heterocyclic compds. represented by I ( $\text{X} = \text{C}$ ,  $\text{N}$ ;  $\text{Z1}$  and  $\text{Z2}$  may form a  $\text{N}$ -containing heterocyclyl) and ortho metal ( $\text{Ir}$ ) complexes. The device shows high luminance, luminescent efficiency, and superior in durability.

L5 ANSWER 24 OF 32 CAPLUS COPYRIGHT 2008 ACS on STN  
AN 2001:732080 CAPLUS

DN 136:247965

TI Design and synthesis of photoluminescent deuterated chromophores  
AU Ueno, Kazunori; Yamada, Naoki; Tanabe, Hiroshi; Li, Xiao-Chang Charles  
CS Electrophotographic Research Center, Canon Inc., Tokyo, Japan  
SO Japanese Journal of Deuterium Science (2001), 10(1), 25-34

CODEN: JJDSEFY; ISSN: 1343-0718

PT Japanese Society for Deuterium Science

DT Journal

LA English

AB A completely deuterated phosphorescent complex, fac-tris (2-phenylpyridine) Iridium-Ir (PPy)3-d24, and a fluorescent polymer, poly (p-phenylenevinylene) (PPV-d6), were prepared and characterized. Electronic absorption and photoluminescence emission spectroscopy showed that both materials have similar optoelectronic properties as their normal analogs. Compared with normal PPV, the PPV-d6 showed 20% enhancement of photoluminescence.

RE.CNT 15 THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 25 OF 32 CAPLUS COPYRIGHT 2008 ACS on STN  
AN 2001:729805 CAPLUS  
DN 135:295943

TI Polymeric fluorescent substance, production method thereof, and polymer light-emitting device using the same  
IN Doi, Shuji; Tsubata, Yoshiaki  
PA Sumitomo Chemical Co., Ltd., Japan  
SO Eur. Pat. Appl., 38 pp.  
CODEN: EPXXDW  
DT Patent  
LA English  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 1138746	A1	20011004	EP 2001-302966	20010329 <--
	EP 1138746	B1	20040526		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	TW 288761	B	20071021	TW 2001-90107456	20010329
	JP 2001342459	A	20011214	JP 2001-100621	20010330 <--
	US 20020027623	A1	20020307	US 2001-820946	20010330 <--
	US 6696180	B2	20040224		
	KR 770961	B1	20071030	KR 2001-17013	20010330
PRAI	JP 2000-98717	A	20000331		

AB Polymeric fluorescent substances are described which have a polystyrene-reduced number-average mol. weight of 103 to 108, and comprises in the

main chain  $\geq 1$  repeating units described by the general formula -Ar1-(CR1:CR2)n- (Ar1 = a C6-60 arylene group, a C4-60 heterocyclic group, or a group comprising a metal complex having, as a ligand,  $\geq 1$  C4-60 organic compds.; Ar1 may have  $\geq 1$  substituents; each of R1 and R2 = independently selected H, C1-20 alkyl, C6-60 aryl, C4-60 heterocyclic, and cyano groups; and n = 0 or 1) wherein 0.05-10 mol% of all repeating units in the polymeric fluorescent substance have branching polymeric chains. Methods for producing the materials are also described which entail reacting appropriate precursors. Light-emitting devices employing the substances and displays and light sources employing the devices are also described.

RE.CNT 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 26 OF 32 CAPLUS COPYRIGHT 2008 ACS on STN  
AN 2001:682100 CAPLUS  
DN 136:12454

TI Reduction of self-quenching effect in organic electrophorescence emitting devices via the use of sterically hindered spacers in phosphorescence molecules  
AU Xie, Hong Zhi; Liu, Man Wah; Wang, Oi Yan; Zhang, Xiao Hong; Lee, Chun Sing; Hung, Liang Sun; Lee, Shuit Tong; Teng, Pang Fei; Kwong, Hoi Lun; Zheng, Hui; Che, Chi Min  
CS Center of Super-Diamond and Advanced Films and Department of Physics and Materials Science, City University of Hong Kong, Hong Kong, Peop. Rep.



China

SO Advanced Materials (Weinheim, Germany) (2001), 13(16), 1245-1248  
 CODEN: ADVMEW; ISSN: 0935-9648

PB Wiley-VCH Verlag GmbH

DT Journal

LA English

AB The photoluminescence (PL) and electroluminescence (EL) properties of new Ir complex, Ir(mppy)3, prepared by introducing a pinene group as spacer on the framework of 2-phenylpyridine, were examined. The identity of the product was carried out by 1H NMR. Mass spectral anal. showed a mol. ionic peak at a m/e ratio of 937.6 corresponding to Ir(mppy)3+ with fragments at a m/e ratio of 689.5 and 434.3, resp. corresponding to Ir(mpp)2+ and Ir(mppy)+. The absorption and PL spectra of Ir(mppy)3 were measured in degassed MeOH solution in its solid state at room temperature, and

in ice glass at 77 K. To study the EL properties, the new Ir compound was used as an emitting dopant for fabricating EL devices with various doping concns. In these devices, 4,4'-dicarbazolyl-1,1'-biphenyl (CBP) acted as a host material. N,N'-di-1-naphthyl-N,N'-diphenyl-biphenyl-4,4'-diamine and tris(8-hydroxyquinolato)aluminum(III) were used as hole-transport layer and an electron transport layer, resp. Current-voltage characteristics of the Ir complex doped devices were measured and they were fairly insensitive to the doping concentration of Ir(mppy)3. The luminance-current studies revealed a gradual increase of brightness when the concentration of Ir(mppy)3 in CBP was increased. Ir(mppy)3 exhibited very strong green phosphorescence emission with a PL quantum yield of 0.71 in solution and a relative short lifetime of 0.33  $\mu$ s in solid. Self-quenching was significantly reduced for this compound in solution even at high concentration because the sterically hindered pinene spacer in the phosphor mol. led to min. bimol. interaction,. Bright green emission was observed from EL devices based on this Ir complex, and external quantum efficiency increased with increasing Ir(mppy)3 concentration, confirming that the aggregation quenching was almost negligible in these phosphorescence devices.

RE.CNT 19 THERE ARE 19 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 27 OF 32 CAPLUS COPYRIGHT 2008 ACS on STN

AN 2001:581384 CAPLUS

DN 135:349716

TI New, efficient electroluminescent materials based on organometallic Ir complexes

AU Grushin, Vladimir V.; Herron, Norman; LeCloux, Daniel D.; Marshall, William J.; Petrov, Viacheslav A.; Wang, Ying

CS Central Research and Development, Experiment Station, E. I. DuPont de Nemours and Co., Inc., Wilmington, DE, 19880-0328, USA

SO Chemical Communications (Cambridge, United Kingdom) (2001), (16), 1494-1495  
 CODEN: CHCOFS; ISSN: 1359-7345

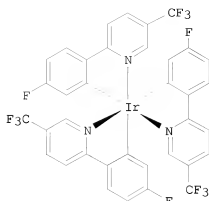
PB Royal Society of Chemistry

DT Journal

LA English

OS CASREACT 135:349716

GI



I

AB Reaction of aqueous IrCl<sub>3</sub> with fluorinated 2-arylpyridines in the presence of AgO<sub>2</sub>CCF<sub>3</sub> afforded fifteen fac-tris-cyclometalated arylpyridine Ir complexes (e.g., I) exhibiting excellent processing and electroluminescent properties which can be fine-tuned via systematic control of the nature and position of the substituents on the aromatic rings. Single-crystal x-ray structures were obtained for I and three other analogous cyclometalated arylpyridine Ir complexes. Nearly all the arylpyridine Ir complexes exhibited fully reversible reduction and oxidation waves.

RE.CNT 17 THERE ARE 17 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 28 OF 32 CAPLUS COPYRIGHT 2008 ACS on STN

AN 2001:417332 CAPLUS

DN 135:53380

TI Complexes of form L<sub>2</sub>MX as phosphorescent dopants for organic LEDs

IN Thompson, Mark E.; Djurovich, Peter; Lamansky, Sergey; Murphy, Drew; Kwong, Raymond; Abdol-Razzaq, Feras; Forrest, Stephen R.; Baldo, Marc A.; Burrows, Paul E.

PA Trustees of Princeton University, USA; University of Southern California

SO PCT Int. Appl., 88 pp.

CODEN: PIXXD2

DT Patent

LA English

FAN.CNT 5

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 2001041512	A1	20010607	WO 2000-US32511	20001129 <--
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, UZ, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
EP 1252803	A1	20021030	EP 2000-980863	20001129 <--
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
JP 2003515897	T	20030507	JP 2001-541304	20001129 <--
CN 1840607	A	20061004	CN 2005-10109631	20001129
EP 1933395	A1	20080618	EP 2008-3327	20001129
R: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LI, LU, MC, NL, PT, SE, TR, AL, LT, LV, MK, RO, SI				

	TW 581762	B	20040401	TW 2000-89125494	20001130
	KR 794975	B1	20080116	KR 2002-706966	20020530
	JP 2005344124	A	20051215	JP 2005-241794	20050823
	KR 2007087061	A	20070827	KR 2007-716045	20070713
	KR 2008027968	A	20080328	KR 2008-704971	20080228
PRAI	US 1999-452346	A	19991201		
	CN 2000-817482	A3	20001129		
	EP 2000-980863	A3	20001129		
	JP 2001-541304	A3	20001129		
	WO 2000-US32511	W	20001129		
	KR 2002-706966	A3	20020530		
	KR 2007-716045	A3	20070713		

OS MARPAT 135:53380

AB Organic light-emitting devices are described in which an emitter layer comprises compds. (e.g., as dopants within a host) which are described by the general formula L2MX (L and X are inequivalent bidentate ligands; and M is a metal which forms octahedral complexes). Devices with emitter layers comprising phosphorescent compds. described by the general formula LL'L"M (L, L', and L" = inequivalent bidentate ligands) and comprising L''L2M (L'' = a monoanionic bidentate ligand coordinated to M through an sp2 carbon and a heteroatom; and wherein the heteroatoms of the two L ligands are in a trans configuration) are also described. The preparation of L2MX by combining a bridged dimer described by the general formula L2M( $\mu$ -Cl)2ML2 with a Bronsted acid XH to make an organometallic complex of formula LMX is also described. Synthetic options allow insertion of fluorescent mols. into a phosphorescent complex, ligands to fine tune the color of emission, and ligands to trap carriers. 3-Methoxy-2-phenylpyridine.

RE.CNT 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 29 OF 32 CAPLUS COPYRIGHT 2008 ACS on STN

AN 2001:145489 CAPLUS

DN 134:340555

TI Synthesis and Characterization of Phosphorescent Cyclometalated Iridium Complexes

AU Lamansky, Sergey; Djurovich, Peter; Murphy, Drew; Abdel-Razzaq, Feras; Kwong, Raymond; Tsyba, Irina; Bortz, Manfred; Muir, Becky; Bau, Robert; Thompson, Mark E.

CS Department of Chemistry, University of Southern California, Los Angeles, CA, 90089, USA

SO Inorganic Chemistry (2001), 40(7), 1704-1711

CODEN: INOCAJ; ISSN: 0020-1669

PB American Chemical Society

DT Journal

LA English

OS CASREACT 134:340555

AB The preparation, photophysics, and solid state structures of octahedral organometallic Ir complexes with several different cyclometalated ligands are reported. IrCl3.nH2O cleanly cyclometalates a number of different compds. (i.e., 2-phenylpyridine (ppy), 2-(p-tolyl)pyridine (tpy), benzoquinoline (bzq), 2-phenylbenzothiazole (bt), 2-(1-naphthyl)benzothiazole (bsn), and 2-phenylquinoline (pq)), forming the corresponding chloride-bridged dimers, C-N2Ir( $\mu$ -Cl)2IrC-N2 (C-N is a cyclometalated ligand) in good yield. These chloride-bridged dimers react with acetyl acetone (acacH) and other bidentate, monoanionic ligands such as picolinic acid (picH) and N-methylsalicylimine (salH), to give monomeric C-N2Ir(LX) complexes (LX = acac, pic, sal). The emission spectra of these complexes are largely governed by the nature of the cyclometalating ligand, leading to  $\lambda_{max}$  values from 510 to 606 nm for the complexes reported here. The strong spin-orbit coupling of iridium mixes the formally forbidden 3MLCT and 3 $\pi$ - $\pi^*$  transitions

with the allowed 1MLCT, leading to a strong phosphorescence with good quantum efficiencies (0.1-0.4) and room temperature lifetimes in the microsecond regime. The emission spectra of the C-N2Ir(LX) complexes are surprisingly similar to the fac-IrC-N3 complex of the same ligand, even though the structures of the two complexes are markedly different. The crystal structures of two of the C-N2Ir(acac) complexes (i.e., C-N = ppy and tpy) have been determined. Both complexes show cis-C,C', trans-N,N' disposition of the two cyclometalated ligands, similar to the structures reported for other complexes with a "C-N2Ir" fragment. NMR data (1H and 13C) support a similar structure for all of the C-N2Ir(LX) complexes. Close intermol. contacts in both (ppy)2Ir(acac) and (tpy)2Ir(acac) lead to significantly red shifted emission spectra for crystalline samples of the ppy and tpy complexes relative to their solution spectra.

RE.CNT 53 THERE ARE 53 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 30 OF 32 CAPLUS COPYRIGHT 2008 ACS on STN  
AN 1994:191965 CAPLUS  
DN 120:191965  
OREF 120:33987a,33990a  
TI Facial tris cyclometalated rhodium(3+) and iridium(3+) complexes: their synthesis, structure, and optical spectroscopic properties  
AU Colombo, Mirco G.; Brunold, Thomas C.; Riedener, Toni; Gudel, Hans U.; Fortsch, Marcel; Buergi, Hans-Beat  
CS Inst. Anorg., Anal. Phys. Chem., Univ. Bern, Bern, 3000, Switz.  
SO Inorganic Chemistry (1994), 33(3), 545-50  
CODEN: INOCAJ; ISSN: 0020-1669  
DT Journal  
LA English  
OS CASREACT 120:191965  
AB The synthesis of the facial tris cyclometalated complexes fac-[Rh(ppy)3] (ppyH = 2-phenylpyridine), fac-[Ir(ppy)3], and fac-[Ir(thpy)3] [thpyH = 2-(2-thienyl)pyridine] by a generalized method is described. The conformation of the complexes is discussed on the basis of the 1H NMR spectra, and for fac-[Ir(thpy)3], the room-temperature crystal structure is presented. The excited-state properties are investigated by absorption, luminescence, and luminescence line-narrowing spectroscopy in different media. The lowest excited states of fac-[Rh(ppy)3] and fac-[Ir(thpy)3] embedded in poly(Me methacrylate) (PMMA) correspond to ligand-centered 3 $\pi$ - $\pi^*$  transitions at 21,500 and 18,340 cm<sup>-1</sup>, resp., whereas for fac-[Ir(ppy)3], a metal to ligand charge-transfer (3MLCT) lowest excited state is found. Evidence for a mixing of charge-transfer character into the 3 $\pi$ - $\pi^*$  lowest excited states is provided by the short luminescence decay times.

L5 ANSWER 31 OF 32 CAPLUS COPYRIGHT 2008 ACS on STN  
AN 1991:185715 CAPLUS  
DN 114:185715  
OREF 114:31379a,31382a  
TI A new synthetic route to the preparation of a series of strong photoreducing agents: fac-tris-ortho-metallated complexes of iridium(III) with substituted 2-phenylpyridines  
AU Dedeian, K.; Djurovich, P. I.; Garces, F. O.; Carlson, G.; Watts, R. J.  
CS Dep. Chem., Univ. California, Santa Barbara, CA, 93106, USA  
SO Inorganic Chemistry (1991), 30(8), 1685-7  
CODEN: INOCAJ; ISSN: 0020-1669  
DT Journal  
LA English  
OS CASREACT 114:185715  
AB Reaction of 2-phenylpyridine (Hppy) with Ir(acac)3 (acac = acetylacetonato) in refluxing glycerol gives the fac-tris-ortho-metallate

of Ir(III), fac-Ir(ppy)<sub>3</sub> in high yield (45%). Phenyl-ring-substituted derivs. of 2-phenylpyridine (R-Hppy) were prepared by cross-coupling of 2-bromopyridine with substituted bromobenzenes. These react with Ir(acac)<sub>3</sub> in a manner analogous to Hppy to give similarly high yields (40-75%) of their resp. tris-ortho-metalates, fac-Ir(R-ppy)<sub>3</sub>.

L5 ANSWER 32 OF 32 CAPLUS COPYRIGHT 2008 ACS on STN  
 AN 1985:113724 CAPLUS  
 DN 102:113724  
 OREF 102:17879a,17882a  
 TI Excited-state properties of a triply ortho-metalated iridium(III) complex  
 AU King, K. A.; Spellane, P. J.; Watts, Richard J.  
 CS Dep. Chem., Univ. California, Santa Barbara, CA, 93106, USA  
 SO Journal of the American Chemical Society (1985), 107(5), 1431-2  
 CODEN: JACSAT; ISSN: 0002-7863  
 DT Journal  
 LA English  
 OS CASREACT 102:113724  
 AB The first triply o-metalated complex of 2-phenylpyridine (ppy) with Ir(III), fac-Ir(ppy)<sub>3</sub>, has been prepared and characterized by <sup>1</sup>H and <sup>13</sup>C NMR spectroscopies. The metal-to-ligand charge-transfer (MLCT) excited state has a 2-μs lifetime in deoxygenated ambient-temperature MePh or MeCN and emits with a luminescence quantum yield of 0.4 ± 0.1. The 5-μs lifetime measured at 77 K suggests a near-unity luminescence yield at low temps. This MLCT excited state is a strong reducing agent with an estimated oxidation potential of +1.8 V vs. SCE.

=>

---Logging off of STN---

=>

Executing the logoff script...

=> LOG Y

COST IN U.S. DOLLARS	SINCE FILE	TOTAL
	ENTRY	SESSION
FULL ESTIMATED COST	103.12	281.69
DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)	SINCE FILE	TOTAL
	ENTRY	SESSION
CA SUBSCRIBER PRICE	-25.60	-25.60

STN INTERNATIONAL LOGOFF AT 16:55:50 ON 23 JUN 2008